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PRESS REVIEW

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Worldwide Terminal Sales Seen Rising 16% Annually

SAN JOSE, Calif. — Worldwide sales of non-intelligent and smart CRT and teleprinter computer terminals are expected to increase by about 16 per cent a year over the next 5 years, according to a recent report from a market research group.

This strong growth rate, however, will not affect the dominant positions of the two giants, IBM and AT&T, which will continue to control a large percentage of the market between them, the report says.

The report, titled Computer Terminals II: CRTs and Teleprinters, studies the market for three types of computer terminals: non-intelligent CRTs, smart CRTs and teleprinters. It is from Creative Strategies, Inc., here.

Creative Strategies predicts that combined sales of the three terminals will reach $1.3 billion by 1981, up from $651 million in 1976. Annual shipments are expected to increase from 365,000 units in 1976 to 835,000 units in 1981.

Of the three markets studied, the growth rate over the next 5 years will be greatest in the smart CRT terminal industry, the report says.

In terms of terminals shipped, the compound annual growth rate of smart CRTs is expected to be 28.9 per cent. For non-intelligent CRTs, it will be about 20.7 per cent and for teleprinters, it will be about 15.8 per cent.

And although in many cases CRT terminals are replacing teleprinter terminals, the report predicts teleprinters will maintain a strong position in the computer terminal marketplace.

The predicted high growth rate for the three products may be considered surprising because of what the report calls "the continual introduction of more intelligent and increasingly programmable terminals."

It explains that there is a trend throughout the industry toward combined use of non-intelligent and smart terminals.

"Growing user sophistication in data processing system components and overall network design allows users to take full advantage of systems resources and applications," the report says.

"Future trends indicate a prevalence in custom applications for systems utilizing a mix of non-intelligent and intelligent units. Systems will become increasingly more flexible . . . depending upon the variety of options that are grouped."

In the CRT terminal market — both non-intelligent and smart — IBM will continue to dominate, the report says.

IBM presently has almost half the total installed base of all types of CRT terminals and almost two-thirds of the installed base of smart terminals. It also holds about 76 per cent of the IBM-compatible smart terminal market and about 38 per cent of the total non-intelligent CRT terminal market.

Because of this strength, Creative Strategies says it "expects new lines of competitive and compatible terminals from independent manufacturers in response to IBM's new Synchronous Data Link Control (SDLC) protocol (for its Systems Network Architecture).

"Terminal manufacturers who sell to the IBM market will have to incorporate SDLC compatibility in order to remain viable in the future. (SDLC) will create market opportunities, not only for use with IBM mainframes, but also, because of its psychological leadership, for all other mainframes."

All of this will help to increase IBM's share of the total installed base of non-intelligent CRT terminals from 38 per cent to 45 per cent by 1981. The IBM-compatible market is expected to grow from 19 per cent of the installed base in 1976 to 20 per cent by 1981. The Teletype-compatible market is also expected to grow, from 21 per cent in 1976 to 22 per cent by 1981.

In the smart terminal industry, 84 per cent of the installed base is IBM-compatible. This will continue to be the case through 1981, the report says. But it predicts that IBM's share of the installed base will drop from 76 per cent in 1976 to 68 per cent in 1981.

In the teleprinter market, the report says the long-time leadership of AT&T's Teletype Corp. is being successfully challenged by other manufacturers.

"Teletype Models 33, 35, 37 and 38 are being replaced with faster, more versatile and more operator-efficient terminals. The market profile is also different," the report says.

"Not only are independent manufacturers producing TTY-compatible machines, they are also producing IBM-compatible machines and machines to emulate General Electric, Centronics, Western Union, Diablo and Xerox, or any combination thereof."

As a result, it says, Teletype teleprinter terminals will continue to decrease in market share from 23 per cent of total 1976 shipments to 20 per cent of 1981 shipments.

IBM's share will also decrease, from 29 per cent of total 1976 shipments to 21 per cent of 1981 shipments. This is primarily because of IBM's "market strategy concentration on CRT terminals," the report says.

It says the fastest growth will be experienced by Teletype-compatible terminals because "Independent manufacturers (will) add solid-state electronic enhancements and quiet, innovative printing mechanisms to their machines."

The acquisition binge in computer services

Thomas J. O'Rourke, president of Tymshare Inc., expects to sign an acquisition agreement next week that will give his Cupertino (Calif.) company a new line of business, a 20% increase in revenues, and some 600 new employees. The proposed deal, which calls for purchasing the assets of Western States Bankcard Assn., is part of a management strategy that the more aggressive commercial data services companies are using in a wild scramble for quick growth.

For Tymshare, which had revenues of $82 million last year, the WSBA deal—if it goes through—will be the company's fifth acquisition in the past year. And it will be at least the 20th acquisition in that same period among the companies that sell computer-based services. "What happened to the corner grocery store is happening now in the data-processing industry," says O'Rourke.

The consolidation process is picking up steam because many of the growing, but still-small, companies in the highly fragmented industry think they face a now-or-never situation. On the one hand, inexpensive minicomputers are giving their traditional customers the ability to do much of their own computing, posing a serious threat to the service firms. On the other hand, new opportunities are proliferating for service companies big enough to put together national computer networks and develop sophisticated programs to use them. To ward off the threat and take advantage of the opportunity, the more aggressive companies are trying to beat hundreds of other contenders into the top ranks of the industry in the next decade. Already on that list are Control Data Corp., whose acquisition of an International Business Machines Corp. subsidiary gave it one of the largest service bureau operations, and General Electric Co., the leader in time-sharing services. With the industry growing at a rate of more than 15% a year and such other giants as McDonnell Douglas Corp. and Boeing Co. also staking out positions, the smaller independents have launched an acquisitions blitzkrieg. It is a management tactic aimed as much at survival as at growth. By the mid-1980s, no more than a dozen companies, capable of generating $250 million or more in revenues, are expected to dominate the field.

Better than sales force. The current wave of acquisitions is certainly not the first.

A wild scramble for quick growth. The object is more marketing clout

In the 1960s, when the industry got started with the advent of commercial data processing, dozens of small companies tried their hand at acquisitions. But technology changes, moves by industry giant IBM, and outright mismanagement soured many of the deals. Depressed stock prices kept merger activity to a minimum during most of the 1970s. And until recently, only Automatic Data Processing Inc. (ADP) in Clifton, N.J., which is blessed with ever-increasing earnings and a solid stock multiple, was able to play the merger game. But Tymshare plunged in two years ago after acquiring United Data Centers Inc.—itself the product of some 20 acquisitions—and after making UDC President Bernard Goldstein head of corporate development. Since then, Goldstein brags, "the acquisition program has added more new revenue than our entire sales force."

More recently, San Francisco-based Itel Corp. joined the party with eight acquisitions in two years, an effort that helped double its data-services revenues to $42 million in 1976 and will more than double them again this year. Smaller companies are also getting active. On-Line Systems Inc. in Pittsburgh, which had sales last year of $12 million, recently agreed to acquire two European time-sharing companies. And National CSS Inc. in Norwalk, Conn., a $40 million company, has appointed a full-time director of corporate development. "We are actively pursuing a number of possibilities," says President Robert E. Weissman.

Liane Enkelis

Tymshare's O'Rourke: "What happened to the corner grocery store is happening now in the data-processing industry."

In part, the surge of interest in mergers is a reflection of the healthier stock prices that successful data-service companies are enjoying. Itel, for example, has seen its stock climb to $20 this year from $12. "Up to now, we were at a disadvantage," says President Peter S. Redfield, "but our emergence has brought us some major opportunities." More fundamentally, the wave of acquisitions is based on a growing perception that only large companies will be fully competitive as the computer-services industry emerges from its mom-and-pop era—and that takeovers are often the fastest way to grow.

Marketing needs. Originally, when data services were generally dispensed in neighborhood computer centers, size meant geographic expansion. "We looked on acquisitions as a way to enter new territory and pick up applications we could build on," says Frank R. Lautenberg, ADP's president, who has engineered more than 50 takeovers in the last 10 years. Lautenberg built a network of 45 computer centers, but with sales expected to approach $250 million in the current fiscal year, he has turned to new criteria. Two years ago ADP used the acquisition of Cyphernetics Corp. to enter the new field of remote

terminal services. "The pattern is changing because we have expanded to every major market," Lautenberg says, "and we are looking for companies with broader management skills."

To most data-services executives nowadays, size means marketing clout, efficient use of computer time, and financial staying power. With computers rapidly coming down in price and becoming available to even the smallest company, notes Itel's Redfield, computer power is almost incidental to success in data services. "Marketing is the competitive difference," he says. Robert Colten, who studies the industry for INPUT, a Menlo Park (Calif.) market research firm, agrees: "You have to be large enough to have a national sales staff and a support system that can take advantage of a good piece of software."

Grant Compton

ADP's Lautenberg: A merger specialist.

George Knight

Itel's Redfield: Seeks major opportunities.

Software, the instructions that guide a computer through its tasks, can be written by "anyone with a pencil," Colten adds. Indeed, entry into the data-services business is so easy that there has been no appreciable reduction in the 2,000-odd participants, despite the wave of takeovers. But it is one thing to write a clever computer program and another to market it nationwide, and marketing limitations keep most new companies small. "We can take a good regional product and sell it all over the country," boasts Tymshare's O'Rourke. "And by using excess capacity in our computer centers, we get quite a lot of leverage."

No guarantees. How this works is illustrated by Tymshare's moves in computerized tax-return services, a field it entered with the acquisition of United Data Centers. "The first thing we did was to bring up their system on our computers, using nighttime capacity," recalls Ronald W. Braniff, Tymshare's marketing vice-president. "That gave us savings of several hundred thousand dollars a year and allowed us to triple the sales force." Last year Tymshare acquired Unitax Inc., a small Anaheim (Calif.) company with another tax service, and it is moving now to integrate the two product lines. "We had the low end of the market, and they had a more sophisticated product," says Unitax founder Walter E. Ferrell. "Putting the two together is a real synergistic effort."

Tymshare is looking for similar opportunities in the Western States Bankcard

Takeovers based on 'chemistry' rather than on strict financial judgments

Assn. deal, which still must be approved by the 145 Western banks that own the big San Francisco-based Master Charge processing center. WSBA has been hurting since it lost Security Pacific National Bank, one of its biggest customers. And its bank ownership had precluded any expansion that would involve handling nonbank credit cards. "Being a nonbank enterprise, we can go after business they couldn't," O'Rourke says, ticking off savings and loan associations, department stores, and credit unions as likely new customers for WSBA's card-verification and processing service. Other data services executives who looked at the WSBA situation question its value. There is no guarantee, they argue, that other customers will not follow Security Pacific's lead and start processing their own cards. But O'Rourke insists that the risk is no greater than with any other acquisition. "When you buy a company, you don't buy customers," he says. "You buy a hunting license."

Taking over WSBA would also give Tymshare an important base for selling other services to banking—an industry O'Rourke lists as a prime target for timesharing applications, along with petrochemicals, accounting, brokerage, and manufacturing.

Up to now, data-services acquisitions have seldom involved much open competition. But when word got out last spring that WSBA was on the block, it touched off a spirited bidding war. WSBA's senior vice-president, Stephen Magee, says that 12 companies eventually expressed interest, and seven submitted formal proposals. William H. Bird, president of Itel's Data Services Group, says he tries to avoid bidding situations and can recall only one deal that had to be restructured when ADP made a competing offer. But in nearly every case, Bird admits, "we run into ADP or Tymshare and one of the secondary companies."

Doubled revenues. Nevertheless, takeovers in this industry still are most often based on subjective considerations such as "fit" or "chemistry," rather than on strict financial calculations. And tender offers or other hostile tactics are unheard of. "It has been a graceful consolidation," says Weissman of National CSS. "It has not been terribly traumatic, with companies going belly-up or being preempted." In most cases, the selling company is closely controlled by a few owner-managers who are not simply cashing in but are looking for a new growth opportunity. With the decline of the stock market, "the idea that we could go public and become wealthy disappeared," explains Leo J. Mott, who founded Dallas-based Utility Network of America in 1972 and sold it to Itel last year. "The security blanket of a larger company enables us to make acquisitions on our own and also gives our investors liquidity." Since the Itel agreement became final in December, Mott notes, UNA has made two deals of its own and expects to double revenues this year.

By keeping entrepreneurs such as Mott and by building new profit centers around them, the service companies hope

Acquisitions: Data services' new source of managerial talent

to avoid the managerial problems that often follow acquisitions. In fact, with the industry growing faster than most companies can find and train people, acquisitions have become an important recruiting tool. Out of the top 20 managers at ADP, 40% came in via acquisition. "Not too many years ago," President Lautenberg recalls, "the $25,000-to-$40,000-a-year executive was at the top of the ladder in this industry. Now the skill requirement is much higher because the technology is more complex and the magnitude of operations is greater. Acquisitions are a major source of this talent."

Not every data-services company is interested in acquisitions. Electronic Data Systems Corp., for example, has become the country's largest manager of computer facilities without making a single acquisition. "They don't want to pollute their homegrown business philosophy with outsiders," suggests one observer. But Tom J. Marquez, EDS financial vice-president, insists that an acquisition requires compatibility in management and personnel as well as a good financial deal. "In 15 years," he says, "we just haven't found a company that meets all those requirements."

Also skeptical of the takeover tactic is William R. Hoover, chairman and president of Computer Sciences Corp., in El Segundo, Calif., which made its last sizable acquisition in 1969—an architectural and engineering company that it later sold. "Acquisitions can't be substituted for building internal strength in marketing and technology to capitalize on changes in the field," Hoover says. ■

Are the Indicators All That Useless?

By GEOFFREY H. MOORE

The existence of revisions does indicate a degree of unreliability—only a degree.

It was the kind of event that gives statistics a bad name.

On Aug. 30 the index of leading economic indicators for July was reported. It showed a decline of 0.2 percent, the third consecutive monthly decline, and that fulfilled the conditions of the "rule of three" that holds that a run of three successive monthly declines presages a recession, or at least an economic slowdown.

The business community, already in the doldrums, didn't need the head-shaking and hand-wringing that followed. And as it turned out, the upset was for nought. When the revision of the July index was announced Sept. 29, it showed a 0.2 percent increase from June.

Blessed are the statistics that are never revised. The Dow Jones average for Sept. 26 will remain the Dow Jones average for Sept. 26. The consumer price index for May, as reported in June, will be the same figure when it is reported again in July. But most economic statistics, like the index of leading indicators, are revised, not only once but several times.

Since economists, policy-makers and the public depend on these numbers, revised and unrevised, in making decisions, it is important to know how dependable they are.

Revisions are unquestionably an annoyance and sometimes an embarrassment to the user of the figures. Calculations made with the initial set of numbers have to be redone when the revised set becomes available. Moreover, the revisions may lead some users to conclude that the figures are altogether unreliable and hence worthless.

Of course, the existence of revisions does indeed indicate a degree of unreliability. But unreliability *is* a matter of degree. Moreover, revisions are a matter of record, and the record of revisions tells us something about how much reliability to expect. With this knowledge one can make better judgments about what the current figures mean, by allowing for the kind of reliability or unreliability they have exhibited in the past. And I believe the statistical agencies have an obligation to make the record of revisions readily available.

With this in mind, let's look at the record of revisions of the index of leading indicators, an index that has become widely used because of its value in anticipating changes in such measures of the economy's performance as the gross national product and employment. It possesses this capacity, by the way, because the 12 components of the index represent factors that are known to have consequences for the future. A large volume of new orders for equipment, for example, will lead to greater production and employment in equipment-producing industries and probably in the industries using the equipment to produce other things.

The index simply summarizes the movements of these carefully selected components, but unless it becomes available promptly some of its anticipatory value will be lost. Hence there is a premium on timeliness; hence, also, the occasion for revisions. The revisions in the leading index derive basically from the revisions of the components themselves, as well as from the fact that figures for some components may be missing when the index for a given month is first calculated.

When the index for July was first reported, it showed a decline of 0.2 percent, coming on top of similar decline of 0.2 percent in May and June. The "rule of three" was applied by many; trouble ahead. Such runs do not occur frequently and when they have occurred in the past a recession or at least an economic slowdown has often followed. The rule doesn't say how large the declines must be, or whether (and why) three small declines in a row are worse than two big declines interrupted by a small rise. So it has some obvious drawbacks. The great advantage of the rule is that it is simple.

Revisions, however, can undermine it. In this case, when the revised index of July was issued, it showed the 0.2 percent increase from June. And the preliminary August figure showed a whopping 0.8 percent increase from July. Further revisions came with the September figures, issued Oct. 28. The July advance was reduced to 0.1 percent, but August now showed an increase of 1.4 percent and the preliminary September index gained 0.3 percent. Revisions had completely upset the "rule of three." If anyone had been depending on it, he was out on a limb, feeling that the producers of the index had sawed it off.

This experience does not, however, mean the index, or even the rule, is useless. It should be used with some knowledge of what the magnitude of revisions is likely to be and of what the typical size of the changes in the index has been. A decline of 0.2 percent is not large and even three of them in a row is not large, either in relation to the usual size of revisions or in relation to the usual monthly change in the index. One does not pull the fire alarm every time one smells a whiff of smoke. Maybe someone is lighting a cigarette.

What can the statistical agencies that release the data do about this? They could make it standard practice to give some information on the size of revisions in the past and what relation they had to the configuration of the revised data. One way to do it is illustrated in the accompanying chart.

The solid line is the leading index as it now stands, with all the revisions that have been made through Oct. 28. The dotted line is the index as it would have been if no revisions had been made at all. It is calculated by stringing together all the preliminary month-to-month percent changes, without taking account of any prior revisions, during the past year.

It is clear that the preliminary figures have given a fairly good picture of where the revised index was heading, though in recent months they have been less optimistic than the revised figures. In both versions of the index the trend flattened out between April and July. One should bear in mind that the September figure in the line labeled "revised" has really not been revised yet, and the immediately preceding months will probably be revised again also. On the other hand, the "preliminary" index is of the same vintage throughout.

In appraising new preliminary figures in the months ahead, this kind of record could be useful and the Department of Commerce, which publishes the leading index, could easily provide it regularly. Study of the historical figures will, I believe, show that the preliminary index is just about as good a leading indicator as the revised index, though this does not mean one should do away with revisions altogether. A record of revisions, constructed along these lines, should also be provided for other types of data. Our statistical intelligence system is enormously important, and this small step would make it even more valuable.

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